

Serial No. 10/642,481  
Docket No. MA-583-US  
MAT.025

9

#### REMARKS

Applicants concurrently file herewith a petition (and fee) for one-month extension of time.

Claims 3-9, 11-15, 18-24, 26-30, 33-39, and 41-45 are pending in this Application. Claims 6, 15, 21, 30, 36, and 45 were previously withdrawn.

Claims 3-5, 7-9, 11-14, 18-20, 22-24, 26-29, 33-35, 37-39, and 41-44 stand rejected under 35 U.S.C. § 112, first paragraph. Claims 3-5, 7-9, 11-14, 18-20, 22-24, 26-29, 33-35, 37-39, and 41-44 stand rejected under 35 U.S.C. § 112, second paragraph.

Claims 3-5, 7-9, 12, 13, 18-20, 22-24, 27, 28, 33-35, 37-39, 42, and 43 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over ANSI/IEEE std.802.1D, 1998 Edition (hereinafter "the 802.1D specification") in view of Viswanath (US Patent No. 6,151,322). Claims 11, 14, 26, 29, 41, and 44 stand rejected under U.S.C. § 103(a) as being unpatentable over the 802.1D specification in view of Viswanath, and further in view of Liu et al. (US 2002/0191628, hereinafter "Liu").

Applicants respectfully traverse these rejections in the following discussion.

#### I. THE CLAIMED INVENTION

The claimed invention (e.g., as defined by exemplary claim 3) is directed to a network system for a network having plural nodes connected.

A node belonging to the network system includes a CPU (Central Processing Unit) executing a learning frame management unit which refers to a source media access control address (MAC SA) table cache to determine whether a learning frame transmission request of a MAC SA has been made, and a memory system that stores a MAC forwarding table memory which stores an output port for a destination MAC address and destination tag information corresponding to a virtual local area network (VLAN) tagged Ethernet frame.

The destination tag information is included in a learning frame that the network transmits to a path opposite to another path in which a main signal frame flows, and the MAC SA table cache which stores a source MAC address which has made a learning frame transmission request. The main signal frame includes source MAC address and the destination MAC address.

Accordingly, in the claimed invention, the destination tag information is included in a

Serial No. 10/642,481  
Docket No. MA-583-US  
MAT.025

10

learning frame that the network transmits to a path opposite to another path in which a main signal frame flows, and the MAC SA table cache which stores a source MAC address which has made a learning frame transmission request. The main signal frame includes source MAC address and the destination MAC address (e.g., see Application at Figs. 38-40; page 62, lines 10-13; page 113, lines 24-28, page 114, lines 11-14).

With this arrangement, the invention assigns a VLAN tag for every destination address. For example, when communicating between a subscriber (A) and ISP (B), the tag corresponding to the subscriber (A) of an address is added to the frame transmitted to a subscriber (A) from ISP (B), and the tag corresponding to ISP (B) of an address is added to the frame transmitted to ISP (B) from a subscriber (A).

For this reason, it is necessary to determine the tag which should be added on a destination MAC address. That is, mapping between a destination MAC address and a tag is needed. Therefore, the invention creates the mapping table (MAC forwarding table memory) of a destination MAC address and the tag which should be added by transmitting a learning frame so that such mapping can be performed automatically.

With the claimed features, even when the asymmetrical flow is flown by sending the learning frame through a path opposite to the path where the main signal frame flows, the learning process can be functioned, the network congestion can be remedied from becoming congestion, and the bandwidth usability can be improved (e.g., see Application at page 113, lines 13-18). Further, because the tag information is included in the learning frame, the setting of the forwarding tag to be added can be automated (e.g., see Application at page 114, lines 15-18).

## II. THE 35 U.S.C. 112, FIRST PARAGRAPH REJECTION

In rejecting claims 3-5, 7-9, 11-14, 18-20, 22-24, 26-29, 33-35, 37-39, and 41-44, the Examiner alleges that the claims fail to comply with the written description.

The Examiner alleges that the specification provides no support for "said destination tag information being included in a learning frame that said network transmits to a path opposite to another path in which a main signal frame flows; and the MAC SA table cache which stores a source MAC address which has made a learning frame transmission request, said main signal frame having said source MAC address and said destination MAC.

Serial No. 10/642,481  
Docket No. MA-583-US  
MAT.025

11

address " (emphasis added by Applicants) as recited in claim 3, and similarly recited in claims 18 and 33. The Examiner, however, is clearly incorrect.

That is, contrary to the Examiner's allegations, at least Figs. 38-40 and corresponding description, and more specifically page 62, lines 10-13, page 112, lines 21-26, page 113, lines 13-18, and page 114, lines 11-14 clearly disclose the aforementioned features of the claimed invention.

For example, the specification of the present Application on page 112, lines 21-26, referring to exemplary Figs. 38-40, discloses:

*"In this embodiment, even when the asymmetrical flow is flown by sending the learning frame through a path opposite to the path where the main signal frame flows, the learning process can be functioned. the network congestion can be remedied from becoming congestion, and the bandwidth usability can be improved" (emphasis added by Applicants).*

Similarly, with regard to the "main signal frame" recited in claims 3, 18, and 33, the specification of the present Application on page 112, lines 21-26, referring to exemplary Figs. 38-40, discloses:

*"In this example, the frame sent from the client C3 is determined as the ICMP ECHO REQUEST. so that the basic software of the client C1 creates an ICMP ECHO REPLY frame of the destination MAC address c3 and the source MAC address c1 and sends to the node G1. This frame is referred to as the main signal frame in the following description" (emphasis added by Applicants).*

Accordingly, the specification of the present Application clearly discloses to one ordinary skill in the art, "said destination tag information being included in a learning frame that said network transmits to a path opposite to another path in which a main signal frame flows; and the MAC SA table cache which stores a source MAC address which has made a learning frame transmission request, said main signal frame having said source MAC address and said destination MAC address " (emphasis added by Applicants) as recited in claim 3, and similarly recited in claims 18 and 33.

Therefore, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

Serial No. 10/642,481  
Docket No. MA-583-US  
MAT.025

12

### III. THE 35 U.S.C. 112, SECOND PARAGRAPH REJECTION

In rejecting claims 3-5, 7-9, 11-14, 18-20, 22-24, 26-29, 33-35, 37-39, and 41-44, the Examiner alleges that the claims are indefinite for failing to particularly point out the invention.

The Examiner alleges that one with ordinary skill in the art would not have clearly understood "*said destination tag information being included in a learning frame that said network transmits to a path opposite to another path in which a main signal frame flows; and the MAC SA table cache which stores a source MAC address which has made a learning frame transmission request, said main signal frame having said source MAC address and said destination MAC address.*" (emphasis added by Applicants) as recited in claim 3, and similarly recited in claims 18 and 33. The Examiner, however, is clearly incorrect.

That is, contrary to the Examiner's allegations, one with ordinary skill in the art would have clearly understood the claimed features, which recite that the learning frame is transmitted to a path opposite to another path in which a main signal frame flows, and main signal frame has the source MAC address and the destination MAC address, as recited in claims 3, 18, and 33.

More specifically, as set forth above in section II, at least Figs. 38-40 and corresponding description, particularly in page 62, lines 10-13, page 112, lines 21-26, page 113, lines 13-18, and page 114, lines 11-14 clearly disclose the aforementioned features of the claimed invention and the benefits that could be achieved by applying the claimed features.

Particularly, with the claimed features, even when the asymmetrical flow is flown by sending the learning frame through a path opposite to the path where the main signal frame flows, the learning process can be functioned, the network congestion can be remedied from becoming congestion, and the bandwidth usability can be improved (e.g., see Application at page 113, lines 13-18). Further, because the tag information is included in the learning frame, the setting of the forwarding tag to be added can be automated (e.g., see Application at page 114, lines 15-18).

Therefore, one of ordinary skill in the art would have sufficiently understand what is being claimed and what the "metes and bounds" of the invention covers.

Accordingly, Applicants respectfully request the Examiner to reconsider and

Serial No. 10/642,481  
Docket No. MA-583-US  
MAT.025

13

withdraw this rejection.

#### IV. THE PRIOR ART REJECTIONS

In rejecting claims 3-5, 7-9, 12, 13, 18-20, 22-24, 27, 28, 33-35, 37-39, 42, and 43, the Examiner alleges that one of ordinary skill in the art would have combined the 802.1D specification with Viswanath to render obvious the claimed invention.

Applicants respectfully submit, however, that the references would not have been combined as alleged by the Examiner and that, even if combined, the alleged combination of references would not teach or suggest each and every feature of the claimed invention.

That is, the 802.1D specification and Viswanath, either alone or in combination (arguedo) fail to teach or suggest, "*said destination tag information being included in a learning frame that said network transmits to a path opposite to another path in which a main signal frame flow,*" as recited in claim 3, and similarly recited in claims 18 and 33.

The 802.1D specification's deficiencies with regard to claims 3, 18, and 33 are clear and, as admitted by the Examiner, the alleged reference fails to teach or suggest the opposite path (Office Action at page 6, last paragraph).

The Examiner attempts to rely on Viswanath for making up the deficiencies of the 802.1D specification. The Examiner, however, is incorrect.

That is, columns 6 and 7 of Viswanath, upon which the Examiner bases the rejection, merely disclose processing of a frame with VLAN tag and the frame without VLAN tag in an integrated multiport switch. Viswanath, however, in columns 6 and 7 (or anywhere else, for that matter) fails to teach or suggest, "*said destination tag information being included in a learning frame that said network transmits to a path opposite to another path in which a main signal frame flow,*" as recited in claim 3, and similarly recited in claims 18 and 33. Thus, Viswanath fails to satisfy the plain meaning of the claim language, and therefore, fails to teach or suggest the aforementioned feature of the claimed invention.

Since Viswanath does not overcome the deficiencies of the 802.1D specification, the combination of references fails to render the rejected claims obvious.

Moreover, Applicants respectfully submit that these references are unrelated and would not have been combined as alleged by the Examiner. Thus, a person of ordinary skill in the art would not have considered combining these disparate references, absent

Serial No. 10/642,481  
Docket No. MA-583-US  
MAT.025

14

impermissible hindsight.

Further, Applicants submit that there is no motivation or suggestion in the references or elsewhere (and thus no predictability for one of ordinary skill in the art) to urge the combination as alleged by the Examiner. Indeed, these references clearly do not teach or suggest their combination. Therefore, Applicants respectfully submit that one of ordinary skill in the art would not have combined the references as alleged by the Examiner.

Therefore, Applicants respectfully submit that, one with ordinary skills in the art would not have combined the 802.1D specification with Viswanath, and even if combined, the alleged combination does not teach or suggest (or render obvious) each and every feature of the claimed invention. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

Moreover, in rejecting claims 11, 14, 26, 29, 41, and 44, the Examiner alleges that one of ordinary skill in the art would have combined the 802.1D specification with Viswanath and Liu to render obvious the claimed invention.

Applicants respectfully submit, however, that the references would not have been combined as alleged by the Examiner and that, even if combined, the alleged combination of references would not teach or suggest each and every feature of the claimed invention.

That is, the 802.1D specification and Viswanath, as set forth above in section A, do not teach or suggest, "*a MAC forwarding table memory which stores an output port for a destination MAC address and destination tag information corresponding to a virtual local area network (VLAN) tagged Ethernet frame, said destination tag information being included in a learning frame that said network transmits to a path opposite to another path in which a main signal frame flows; and the MAC SA table cache which stores a source MAC address which has made a learning frame transmission request, said main signal frame having said source MAC address and said destination MAC address,*" emphasis added by Applicants) as recited in independent claim 3, and similarly recited in independent claims 18 and 33.

Moreover, Applicants submit that Liu fails to make up the deficiencies of the 802.1D specification and Viswanath.

Indeed, Liu teaches a design model 11 that includes a lookup step 13 and a forwarding translation step 15 (paragraphs [0023] and [0024]). Liu, however, fails to teach or suggest the aforementioned features of the claimed invention.

Serial No. 10/642,481  
Docket No. MA-583-US  
MAT-025

15

Indeed, the Examiner does not even allege that Liu teaches or suggests these features. The Examiner merely relies on Liu for allegedly teaching a broadcast table memory and a tag address management table.

Since Liu does not overcome the deficiencies of the 802.1D specification and Viswanath, the combination of references fails to render the rejected claims obvious.

Therefore, Applicants respectfully submit that, one with ordinary skills in the art would not have combined the 802.1D specification with Viswanath and Liu, and even if combined, the alleged combination does not teach or suggest (or render obvious) each and every feature of the claimed invention. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

#### V. FORMAL MATTERS AND CONCLUSION

Applicants respectfully request the Examiner's acknowledgment of the priority document.

With respect to the Examiner's objection to the drawings, Applicants submit that, as set forth above in section II, the drawings of the present Application at least in exemplary Figs. 38-40 clearly show the claimed destination tag information that is included in a learning frame that the network transmits to a path opposite to another path in which a main signal frame flows, as recited in claims 3, 18, and 33.

Therefore, Applicants respectfully request the Examiner to reconsider and withdraw the objections to the drawings.

Furthermore, regarding the Examiner's objection to the specification, Applicants submit that, as set forth above in section II, the specification at least in Figs. 38-40 and corresponding description, and more specifically in page 62, lines 10-13, page 112, lines 21-26, page 113, lines 13-18, and page 114, lines 11-14 clearly disclose the claimed destination tag information that is included in a learning frame that the network transmits to a path opposite to another path in which a main signal frame flows, as recited in claims 3, 18, and 33.

Therefore, Applicants respectfully request the Examiner to reconsider and withdraw this objection.

In view of the foregoing, Applicants submit that claims 3-5, 7-9, 11-14, 18-20, 22-24,

Serial No. 10/642,481  
Docket No. MA-583-US  
MAT.025

16

26-29, 33-35, 37-39, and 41-44, all the claims presently under examination in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: 05/28/10

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#### FACSIMILE TRANSMISSION

I hereby certify that I am filing this paper via facsimile, to Group Art Unit 2442, at (571) 273-8300, on May 28, 2010.

Respectfully Submitted,

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